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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/671,237	09/24/2003	Franklin C. Crow	NVID-073/00US	8134

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EXAMINER	
CASCHERA, ANTONIO A	

ART UNIT	PAPER NUMBER
2676	

DATE MAILED: 08/22/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/671,237	CROW ET AL.	
	Examiner	Art Unit	
	Antonio A. Caschera	2676	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *02 June 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *34-55* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *34-55* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *24 September 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

1. Claims 34-42, 44, 45, 47-49 and 51-55 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brokenshire et al. (U.S. Publication 2002/0158885 A1) in view of Cloutier (U.S. Patent 6,671,000 B1).

In reference to claims 34 and 45, Brokenshire et al. discloses an improved method, apparatus and computer implement instructions for generating antialiased lines for display in a data processing system (see paragraph 8, lines 1-4). Brokenshire et al. discloses the system receiving a gamma correction table or function from an application and storing the table or function in storage (see paragraph 41, lines 1-5). Brokenshire et al. also discloses the system comprising a rasterization engine, using the gamma correction table or function to generate gamma correction values for a pixel representative of text and images to be displayed (see paragraph 31, lines 1-17 and paragraph 32, lines 1-3). Brokenshire et al. discloses a gamma correction unit including a coverage interpolation unit, among other elements, which identifies how much of a pixel is covered by a line (see paragraph 51, lines 1-5 and paragraph 52, 1-4). Note, the office interprets the line of Brokenshire et al. equivalent to the applicant's "primitive"

claim element. Brokenshire et al. further discloses the coverage interpolation unit assigning coverage values to pixels and reading the gamma correction table using the pixel coverage values as indices into the table (see paragraph 32, lines 1-5 and paragraph 52, lines 1-4). Brokenshire et al. discloses calculating a gamma corrected coverage value for only pixels covered by the line (see paragraph 8, lines 7-10) from coverage values and gamma correction data (see paragraph 53, lines 1-14) and #902, 914, "Gamma Corrected Coverage" and "Final Pixel Value" of Figure 9). Brokenshire et al. discloses performing such gamma correction techniques in order to correct for artifacts or aliasing found in text, points, lines or triangles by adjusting pixel intensities (see paragraphs 6-7). Note, since Brokenshire et al. discloses gamma correction adjusting pixel intensities of a display, the office interprets that Brokenshire et al. inherently discloses gamma correction in order to at least partially compensate for a nonlinear response in the display as such a response is directly related to display driver voltages and pixel intensities. Brokenshire et al. also discloses gamma correction performed on various types of drawing elements chosen from the group comprising text, points, lines or triangles (see paragraphs 6-7), each of which, the office interprets equivalent to a "primitive type" of Applicant's claim. Brokenshire et al. does not explicitly disclose receiving an instruction for enabling gamma correction for selected primitives however Cloutier does. Cloutier discloses satisfying a plurality of gamma requirements for displaying images on a computer monitor (see column 1, lines 5-6) by incorporating instructions, via a GUI environment, to allow user operation of gamma adjustment by enabling or disabling gamma adjustment (see column 8, lines 17-46 and Figure 10). Note, since the "monitor calibration" (#1002 of Figure 10) software button of Cloutier allows the user to perform gamma correction (see columns 5-6, lines 66-44), the office interprets that Cloutier

inherently discloses receiving instruction for enabling and disabling gamma correction. Further note, since the gamma correction is performed for the entire monitor, the office interprets that gamma correction upon the primitives being processed is also therefore inherently enabled or disabled via the user's selection of the calibration action. It would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the antialiasing using gamma correction techniques of Brokenshire et al. with the GUI processing selection means of Cloutier in order to ensure that the overall gamma of the image processing system is correct by including multiple adjustable parameters, which include gamma, which may be stored permitting a variety of user set monitor definitions to be quickly accessed and utilized (see columns 7-8, lines 66-2 and column 8, lines 13-16 of Cloutier).

In reference to claims 35 and 48, Brokenshire et al. and Cloutier disclose all of the claim limitations as applied to claims 34 and 47 respectively. Brokenshire et al. also discloses gamma correction performed on various types of drawing elements chosen from the group comprising text, points, lines or triangles (see paragraphs 6-7), each of which, the office interprets equivalent to a "primitive type" of Applicant's claim.

In reference to claim 36, Brokenshire et al. and Cloutier disclose all of the claim limitations as applied to claim 34 above in addition, Brokenshire et al. further discloses receiving user input to generate the values within the gamma correction table and storing the values within memory (see paragraph 33, lines 1-3 and paragraph 35, lines 2-6 and #400 and 402 of Figure 4). Note, the office interprets that since Brokenshire et al. discloses allowing and receiving user input to determine the gamma correction table values, Brokenshire et al. inherently discloses generating a GUI having some sort of gamma correction control options. Further, text input

boxes, drop-down menus, radio buttons, checkboxes, etc. are all known elements of GUI's allowing for selection/enablement of functions.

In reference to claims 37, 38, 53 and 54, Brokenshire et al. and Cloutier disclose all of the claim limitations as applied to claims 34 and 52 above. Cloutier discloses satisfying a plurality of gamma requirements for displaying images on a computer monitor (see column 1, lines 5-6) by incorporating instructions, via a GUI environment, to allow user operation of gamma adjustment by enabling or disabling gamma adjustment (see column 8, lines 17-46 and Figure 10). Note, since the "monitor calibration" (#1002 of Figure 10) software button of Cloutier allows the user to perform gamma correction (see columns 5-6, lines 66-44), the office interprets that Cloutier inherently discloses receiving instruction for enabling and disabling gamma correction. Further note, since the gamma correction is performed for the entire monitor, the office interprets that gamma correction upon the primitives being processed is also therefore inherently enabled or disabled via the user's selection of the calibration action.

In reference to claim 39, Brokenshire et al. and Cloutier disclose all of the claim limitations as applied to claim 36 above. Brokenshire et al. further discloses receiving user input to generate the values within the gamma correction table and storing the values within memory (see paragraph 33, lines 1-3 and paragraph 35, lines 2-6 and #400 and 402 of Figure 4). Further, since Brokenshire et al. discloses receiving user input to generate gamma correction values, the office interprets that the gamma correction values are generated dependent upon the display type implemented in the graphics system as certain displays have certain voltage characteristics directed towards pixel intensities therefore requiring specific gamma correction adjustments.

Therefore the office interprets Brokenshire et al. to inherently disclose the feature of selecting a gamma correction for a display type.

In reference to claim 40, Brokenshire et al. and Cloutier disclose all of the claim limitations as applied to claim 34 above. Cloutier discloses satisfying a plurality of gamma requirements for displaying images on a computer monitor (see column 1, lines 5-6) by incorporating instructions, via a GUI environment, to allow user operation of gamma adjustment by enabling or disabling gamma adjustment (see column 8, lines 17-46 and Figure 10). Note, since the "monitor calibration" (#1002 of Figure 10) software button of Cloutier allows the user to perform gamma correction (see columns 5-6, lines 66-44), the office interprets that Cloutier inherently discloses receiving instruction for enabling and disabling gamma correction. Further note, since the gamma correction is performed for the entire monitor, the office interprets that gamma correction upon the primitives being processed is also therefore inherently enabled or disabled via the user's selection of the calibration action.

In reference to claim 41, Brokenshire et al. discloses an improved method, apparatus and computer implement instructions for generating antialiased lines for display in a data processing system (see paragraph 8, lines 1-4). Brokenshire et al. discloses the system receiving a gamma correction table or function from an application and storing the table or function in storage (see paragraph 41, lines 1-5). Brokenshire et al. also discloses the system comprising a rasterization engine, using the gamma correction table or function to generate gamma correction values for a pixel representative of text and images to be displayed (see paragraph 31, lines 1-17 and paragraph 32, lines 1-3). Brokenshire et al. discloses a gamma correction unit including a coverage interpolation unit, among other elements, which identifies how much of a pixel is

covered by a line (see paragraph 51, lines 1-5 and paragraph 52, 1-4). Note, the office interprets the line of Brokenshire et al. equivalent to the applicant's "primitive" claim element. Brokenshire et al. further discloses the coverage interpolation unit assigning coverage values to pixels and reading the gamma correction table using the pixel coverage values as indices into the table (see paragraph 32, lines 1-5 and paragraph 52, lines 1-4). Brokenshire et al. discloses calculating a gamma corrected coverage value for only pixels covered by the line (see paragraph 8, lines 7-10) from coverage values and gamma correction data (see paragraph 53, lines 1-14) and #902, 914, "Gamma Corrected Coverage" and "Final Pixel Value" of Figure 9). Brokenshire et al. discloses performing such gamma correction techniques in order to correct for artifacts or aliasing found in text, points, lines or triangles by adjusting pixel intensities (see paragraphs 6-7). Note, since Brokenshire et al. discloses gamma correction adjusting pixel intensities of a display, the office interprets that Brokenshire et al. inherently discloses gamma correction in order to at least partially compensate for a nonlinear response in the display as such a response is directly related to display driver voltages and pixel intensities. Brokenshire et al. also discloses gamma correction performed on various types of drawing elements chosen from the group comprising text, points, lines or triangles (see paragraphs 6-7), each of which, the office interprets equivalent to a "primitive type" of Applicant's claim. Brokenshire et al. also discloses the system comprising both a CPU and graphics processor (see paragraph 30 and #202 and 218 of Figure 2). Brokenshire et al. does not explicitly disclose receiving an instruction for enabling gamma correction for selected primitives however Cloutier does. Cloutier discloses satisfying a plurality of gamma requirements for displaying images on a computer monitor (see column 1, lines 5-6) by incorporating instructions, via a GUI environment, to allow user

operation of gamma adjustment by enabling or disabling gamma adjustment (see column 8, lines 17-46 and Figure 10). Note, since the "monitor calibration" (#1002 of Figure 10) software button of Cloutier allows the user to perform gamma correction (see columns 5-6, lines 66-44), the office interprets that Cloutier inherently discloses receiving instruction for enabling and disabling gamma correction. Further note, since the gamma correction is performed for the entire monitor, the office interprets that gamma correction upon the primitives being processed is also therefore inherently enabled or disabled via the user's selection of the calibration action. It would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the antialiasing using gamma correction techniques of Brokenshire et al. with the GUI processing selection means of Cloutier in order to ensure that the overall gamma of the image processing system is correct by including multiple adjustable parameters, which include gamma, which may be stored permitting a variety of user set monitor definitions to be quickly accessed and utilized (see columns 7-8, lines 66-2 and column 8, lines 13-16 of Cloutier).

In reference to claim 42, Brokenshire et al. and Cloutier disclose all of the claim limitations as applied to claim 41 above. Brokenshire et al. also discloses gamma correction performed on various types of drawing elements chosen from the group comprising text, points, lines or triangles (see paragraphs 6-7), each of which, the office interprets equivalent to a "primitive type" of Applicant's claim.

In reference to claim 44, Brokenshire et al. and Cloutier disclose all of the claim limitations as applied to claim 41 above. Since Brokenshire et al. discloses receiving graphics data for display including primitives, performing gamma correction on the primitives to form antialiased lines and displaying the antialiased lines (see paragraph 8, lines 6-11), the office

interprets that gamma correction is performed on each pixel of the antialiased image, the image of Brokenshire et al. contains these lines.

In reference to claim 47, claim 47 is equivalent in scope to claim 34 and therefore is rejected under similar rationale. In addition, Brokenshire et al. discloses the system comprising a graphics adapter (#218 of Figure 2) which further comprises a rasterization engine to receive primitive data and produce a matrix of pixels (see paragraph 31, lines 3-8), a coverage interpolation unit to calculate a coverage value per pixel of a line (see paragraph 50, lines 1-5, paragraph 51, lines 1-2, paragraph 52, lines 1-4 and paragraph 30, lines 3-4) and a gamma correction table to store gamma correction values (see paragraph 51, lines 1-5 and #914 of Figure 3). Brokenshire et al. discloses a host processor application generating graphics data to be displayed by the graphics adapter (see paragraph 30, lines 4-7 and paragraph 31, lines 1-2). The host processor of Brokenshire et al. is not explicitly disclose as being a part of the graphics adapter however, it would have been obvious to one of ordinary skill in the art to shift the location of the host processor application to be included in the graphics adapter of Brokenshire et al., since it has been held to be within the general skill of a worker in the art to relocate such an element as the exact position would not greatly effect the overall operation of the system and such particular positioning is a manner of engineering design choice. *In re Japikse, 86 USPQ 70 (CCPA 1950).*

In reference to claim 49, Brokenshire et al. and Cloutier disclose all of the claim limitations as applied to claim 47 above, Brokenshire et al. further discloses receiving user input to generate the values within the gamma correction table and storing the values within memory (see paragraph 33, lines 1-3 and paragraph 35, lines 2-6 and #400 and 402 of Figure 4).

In reference to claim 51, Brokenshire et al. and Cloutier disclose all of the claim limitations as applied to claim 47, Brokenshire et al. further discloses receiving user input to generate the values within the gamma correction table and storing the values within memory (see paragraph 33, lines 1-3 and paragraph 35, lines 2-6 and #400 and 402 of Figure 4). Note, the office interprets that since Brokenshire et al. discloses allowing and receiving user input to determine the gamma correction table values, Brokenshire et al. inherently discloses generating a GUI having some sort of gamma correction control options.

In reference to claim 52, Brokenshire et al. and Cloutier disclose all of the claim limitations as applied to claim 47 above in addition, Brokenshire et al. discloses a host processor (#202) and main memory (#204) connected to the graphics adapter (#218) via a bus (#206 of Figure 2).

In reference to claim 55, Brokenshire et al. and Cloutier disclose all of the claim limitations as applied to claim 47 above in addition, Brokenshire et al. discloses that the gamma correction table is "run time loadable" since values for the table are generated within an application implementing user input (see paragraph 35, lines 2-8 and #400 and 402 of Figure 4).

2. Claims 43, 46 and 50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brokenshire et al. (U.S. Publication 2002/0158885 A1), Cloutier (U.S. Patent 6,671,000 B1) and further in view of Gosset et al. (U.S. Patent 6,606,093 B1).

In reference to claims 43 and 50, Brokenshire et al. and Cloutier disclose all of the claim limitations as applied to claims 41 and 47 respectively above. Although Brokenshire et al. discloses blending pixel color values with a frame buffer color (see paragraph 53), neither Brokenshire et al. nor Cloutier explicitly disclose performing the blending with a weight

assigned to the pixels given by the gamma corrected coverage value and a weight assigned to background pixels being one minus the gamma corrected coverage value. Gosset et al. discloses an improved technique for antialiasing by gamma correction of pixel intensity of covered pixels (see column 2, lines 41-42). Gosset et al. discloses using a gamma corrected coverage value of a pixel in alpha blending by blending the pixel color with the color of background objects (see column 6, lines 26-32). Gosset et al. specifically discloses performing the blending using the equation aS+(1-a)D where a is the gamma corrected coverage value, S is the source pixel color, and D is the pixel color before rendering the antialiased line or the background color since the previous color of the pixel would now be the background color (see column 6, lines 32-37). Note, the office interprets the "a" value of Gosset equivalent to the gamma corrected coverage value weight given to the antialiased pixel of applicant's claim and the "1-a" equivalent to the one minus the gamma corrected coverage value weight given to the background pixels. It would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the antialiasing using gamma correction techniques of Brokenshire et al. and GUI processing selection means of Cloutier with the alpha blending techniques of Gosset et al. in order to reduce the need for extensive computations used in "blurring" pixels to reduce "jaggies" seen in diagonal lines (see column 2, lines 11-26 of Gosset et al.) by providing the above blending equation which uses "standard" computations. Further, Gosset et al. also performs the antialiasing techniques disclosed in the independent and therefore is deemed as directly applicable and combinable with the antialiasing using gamma correction techniques of Brokenshire et al.

In reference to claim 46, Brokenshire et al., Cloutier and Gosset et al. disclose all of the claim limitations as applied to claim 43 above. Cloutier discloses satisfying a plurality of gamma requirements for displaying images on a computer monitor (see column 1, lines 5-6) by incorporating instructions, via a GUI environment, to allow user operation of gamma adjustment by enabling or disabling gamma adjustment (see column 8, lines 17-46 and Figure 10). Note, since the "monitor calibration" (#1002 of Figure 10) software button of Cloutier allows the user to perform gamma correction (see columns 5-6, lines 66-44), the office interprets that Cloutier inherently discloses receiving instruction for enabling and disabling gamma correction. Further note, since the gamma correction is performed for the entire monitor, the office interprets that gamma correction upon the primitives being processed is also therefore inherently enabled or disabled via the user's selection of the calibration action.

Response to Arguments

3. The cancellation of claims 1-33 and addition of claims 34-55 are noted.

4. Applicant's arguments, see pages 7-9 of Applicant's Remarks, filed 06/02/2005, with respect to the rejection(s)of claim(s) 1-33 under 35 USC 102(e) and 103(a) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Cloutier.

References Cited

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

a. Ihara et al. (U.S. Patent 6,522,329 B1)

- Ihara et al. discloses an image data processing device and method which enable quick generation of image data of animation.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Antonio Caschera whose telephone number is (571) 272-7781. The examiner can normally be reached Monday-Thursday and alternate Fridays between 7:30 AM and 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Bella, can be reached at (571) 272-7778.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:

571-273-8300 (Central Fax)

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

aac

8/15/05

Matthew C. Bella

MATTHEW C. BELLA
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